

# Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/GB05/001174

International filing date: 23 March 2005 (23.03.2005)

Document type: Certified copy of priority document

Document details: Country/Office: GB  
Number: 0406459.8  
Filing date: 23 March 2004 (23.03.2004)

Date of receipt at the International Bureau: 31 May 2005 (31.05.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland  
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse



PCT/GB 2005 / 0 0 1 1 7 4



INVESTOR IN PEOPLE

The Patent Office  
Concept House  
Cardiff Road  
Newport  
South Wales  
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

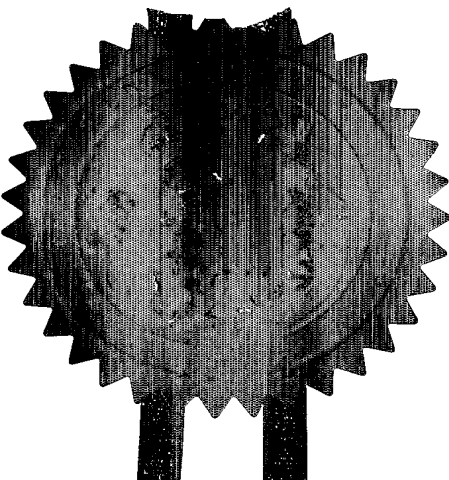
In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

*William Morell*

Dated 26 April 2005

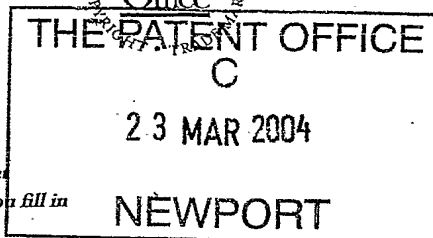


2011-05-01 09:11





23MAR04 E883084-1 001559  
P01/7700 0.00-0406459.8 NONE



# Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road  
Newport  
South Wales  
NP10 8QQ

1. Your reference RRH/KH/RYANJ.1

2. Patent application number

(The Patent Office will fill this part in)

23 MAR 2004

0406459.8

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Anthony RYAN  
and  
Janice RYAN  
18 Coed-y-Gores  
Llanedeyrn  
CARDIFF  
CF23 9ND

8834590001

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

8.834608001

4. Title of the invention

Improvements in and relating to  
Electrically Heated Plant Propagators

5. Name of your agent (if you have one)

Wynne-Jones, Lainé & James,

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

33 St Mary Street  
CARDIFF  
CF10 1AF

Patents ADP number (if you know it)

1792002

6. Priority: Complete this section if you are declaring priority from one or more earlier patent applications, filed in the last 12 months.

Country

Priority application number  
(if you know it)

Date of filing  
(day / month / year)

7. Divisionals, etc: Complete this section only if this application is a divisional application or resulted from an entitlement dispute (see note f)

Number of earlier UK application

Date of filing  
(day / month / year)

8. Is a Patents Form 7/77 (Statement of inventorship and of right to grant of a patent) required in support of this request?

No

Answer YES if:

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body.

Otherwise answer NO (See note d)

# Patents Form 1/77

9. Accompanying documents: A patent application must include a description of the invention. Not counting duplicates, please enter the number of pages of each item accompanying this form:

Continuation sheets of this form	0
Description	5
Claim(s)	0
Abstract	0
Drawing(s)	2

11. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for a preliminary examination and search (Patents Form 9/77)

Request for a substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/We request the grant of a patent on the basis of this application.

Signature(s) *Wynne-Jones, Lainé & James* (Wynne-Jones, Lainé & James) Date 22.03.04

12. Name, daytime telephone number and e-mail address, if any, of person to contact in the United Kingdom
- R R Halstead  
(029) 2022 9526

## Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

## Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered YES in part 8, a Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- Part 7 should only be completed when a divisional application is being made under section 15(4), or when an application is being made under section 8(3), 12(6) or 37(4) following an entitlement dispute. By completing part 7 you are requesting that this application takes the same filing date as an earlier UK application. If you want the new application to have the same priority date(s) as the earlier UK application, you should also complete part 6 with the priority details.

Improvements in and relating to electrically heated plant propagators

This invention relates to electrically heated plant propagators.

It is known to electrically heat plant propagators by providing under soil heating elements which keep the soil at a required temperature and which, in turn, keeps the air within the propagator also at an elevated temperature relative to the ambient temperature of the propagator's surroundings. In this way seeds can be induced to germinate before they would ordinarily do so and the growth of seedlings may subsequently be accelerated within the protection afforded by the usually transparent cover or lid.

A problem with such known plant propagators is that they are prone to induce condensation therewithin which may damage delicate plants and seedlings, cause e.g. mildew to build up, as well as reduce the transmission of light into the propagator, thereby reducing the amount of incoming ultraviolet radiation required in order for photosynthesis to take place. A further problem is that such under soil heating may provide local hotspots which could damage the roots of a plant and/or may dry out parts of the soil, thereby impeding the growth of roots.

The present invention is derived from the surprising realisation that the problem of the prior art may be obviated by heating the propagator in a different way which mimics the way in which vehicle windscreens are heated.

According to the invention there is provided an electrically heated plant propagator comprising a soil tray and a transparent cover or lid, characterised in that the cover or lid has electrically conductive heating elements on or in the inner surface of the cover or lid, the heating elements being connectable to an

electric power supply by which the heating element, through resistive heating, heats the inside of the plant propagator when the cover or lid is closed.

Conveniently, a spacer collar is provided between the cover and lid and the outer rim of the tray, which is preferably transparent, and provides room for plants to grow upwards before entering the space afforded by the inside of the cover or lid. The spacer collar may be integral with the cover or lid, or it may be separate, or it may be integral with the tray.

Preferably, the spacer collar is integral with the cover or lid which is conveniently hinged thereto and electrically connectable therewith, such as a 12 volt or 24 volt electricity supply via a battery or from the mains electricity supply via a transformer.

Conveniently, a thermostat may be provided, such as on or in the spacer collar to ensure that the chosen temperature is maintained.

The spacer collar itself may also be electrically heated through the use of electrically conductive heating elements and the tray itself may also be electrically heated through conventional means, either separately or through a single unified electric circuit.

Conveniently, a sensor may be incorporated into the propagator to sense conditions in which condensation may be induced, such as by a sharp drop in ambient temperature outside the propagator as compared to the air temperature within the propagator, a logic circuit then e.g. automatically switching the heating elements for the transparent cover or lid and/or the spacer collar on in order to prevent or inhibit the build up of condensation, the sensor also sensing when

conditions have changed such that the heating circuit may be switched off when an appropriate rise in ambient temperature has been noted.

The invention will now be described, by way of example only, with reference to the accompanying drawings in which:

5           Figure 1 is a perspective view of the rear of a plant propagator according to the invention, and

Figure 2 is a perspective front view of the plant propagator of Figure 1.

Referring first to Figure 1 a plant propagator shown generally at 1 is in three part form, namely a soil tray 2 for containing soil, a transparent spacer collar 3 and a transparent cover or lid 4. The cover or lid 4 is joined to the collar 3 by a pair of hinges 5 and the collar itself is detachably secured to the outer rim of the tray 2 so as to allow the tray 2 to be filled with soil as required or for existing soil to be replaced.

On the inside surface of the cover or lid is an electrically conducting heating grid or element 6 which may be a single flat copper wire extending over all or part of the inside of the cover or lid 4. The heating element 6 is connected to a thermostat 7 (shown in Figure) and a power inlet socket (not shown) by which it and the heating element 6 may be electrically activated. This may be by e.g. the insertion of a jackplug connected to a 12 or 24 volt battery (not shown) or where mains electricity is conveniently available a transformer (not shown) may be used to provide an electrical supply of a required voltage.

Although it is normally desirable to keep the inside of a propagator warm and moist nevertheless there are occasions when it is preferable to provide ventilation without opening the cover or lid and this is achieved via slidably



openable vents 8 around the periphery of the spacer collar 3.

In use, because the heating element 6 is disposed on the inside surface of the cover or lid 4, when it is operating because there is an imbalance between the temperature therewithin and ambient temperature such that the former is higher than the latter, particularly at night, condensation cannot form or if forms it immediately evaporates, thereby avoiding the formation of large droplets of water which could block sunlight, drip onto e.g. seedlings or delicate plants or otherwise act in an undesirable manner of running down the sides of the propagator to wash into the soil in the tray 2 and thereafter evaporate therefrom in a manner illustrative of prior art electrically heated plant propagators.

As well as the thermostat 6, a separate sensor (not shown) may be incorporated within the propagator to sense e.g. a sharp decrease in ambient temperature as opposed to the air temperature within the propagator 1 and through the use of a logic circuit switch the heating element 6 on until the temperature in balance ends, such that if, say, the propagator 1 has conventional under soil heating in the tray 2 the use of the heating element 6 may be selectively employed in order to specifically prevent or inhibit the build up of condensation, or if a conventional heating element is not present in the tray 2 the heating element 6 may heat the soil and air within the propagator 1, thereby dispensing with separate heating for the soil itself.

The invention, by borrowing technology from the automotive industry, therefore provides a neat and elegant solution to the prior art problems referred to above.

As will be evident to those skilled in the art, various modifications can be

made or followed in light of the foregoing disclosure and discussion without departing from the spirit or scope of the invention.

RECEIVED  
JAN 10 1984  
FBI - NEW YORK



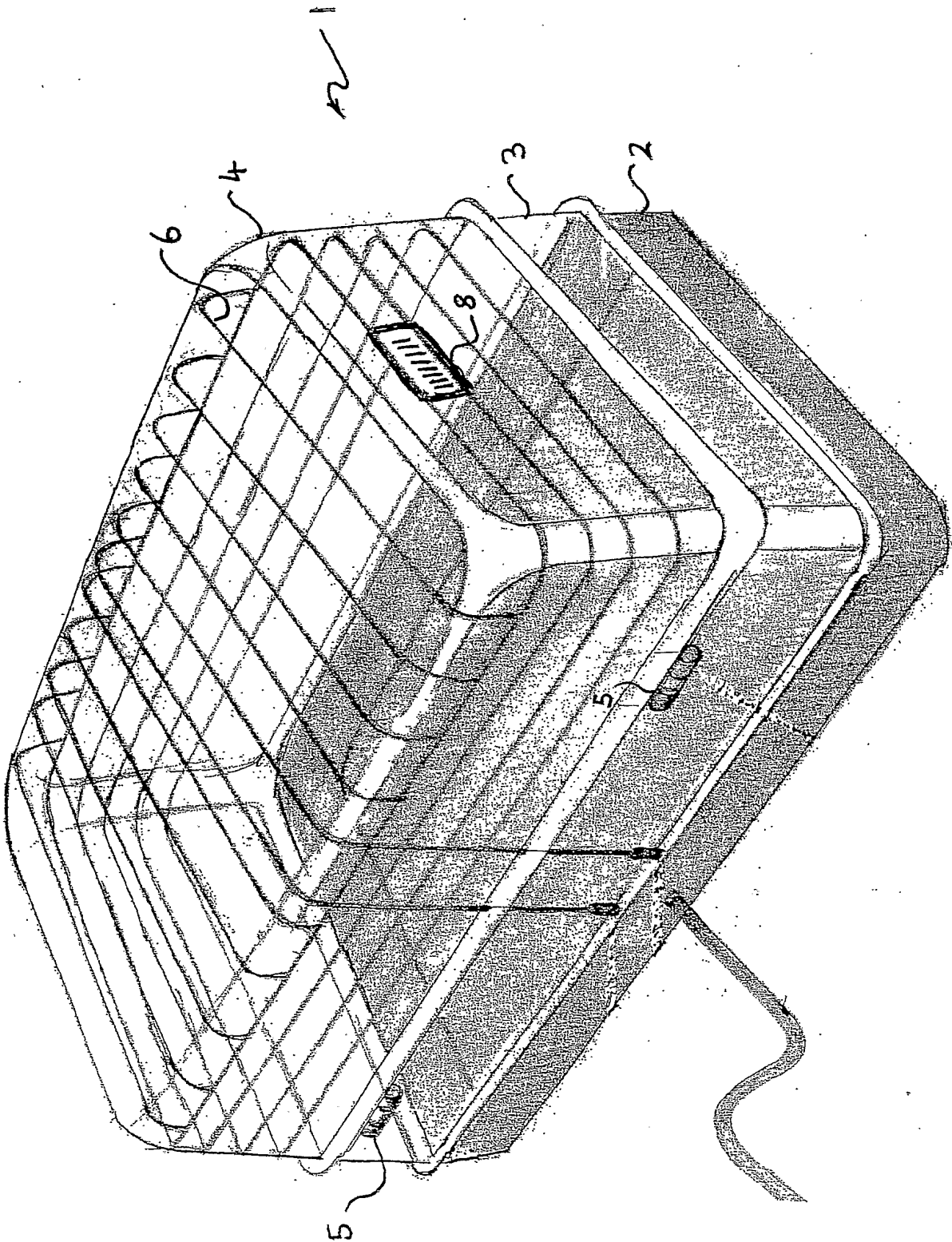


FIGURE 1



2/2

FIGURE 2

